1877

REGISTER

AND

PRESIDENT'S REPORT

OF THE

MARYLAND

Agricultural College

FOR

Session Ending June 26,

—1877.—

BALTIMORE:
FROM THE STEAM PRESS OF JAMES YOUNG,
112 WEST BALTIMORE STREET.
1877.

Trustees.

Representing the State Ex-Officio:

HON. JOHN LEE CARROLL,
Governor of Maryland,
PRESIDENT.

HON. DANIEL FIELDS,
President of the Senate.

HON. LEWIS C. SMITH,
Speaker of the House of Delegates.

PROF. M. A. NEWELL,
Principal of State Normal School.

Representing the Stockholders:

HON. JAMES T. EARLE,
MAJOR J. F. LEE,
E. WHITMAN, ESQ.,
ALLEN DODGE, ESQ.,
JUDGE W. H. TUCK,
WM. B. SANDS, ESQ.,
GEN. E. L. F. HARDCASTLE.

Visitors.

Hon. E. J. Henkle.....*U. S. House of Representatives.*
Mr. J. H. McHenry.....*Pikesville, Md.*
Mr. James L. McLean.....*Baltimore, Md.*
Hon. Henry Snyder.....*Baltimore, Md.*
Hon. James A. Bond.....*Prince Frederick, Md.*
Hon. Daniel Field.....*Denton, Md.*
Hon. J. K. Longwell.....*Westminster, Md.*
Hon. C. Mackall, M. D.....*Elkton, Md.*
Major Wm. B. Mathews.....*Port Tobacco, Md.*
Hon. Francis P. Phelps.....*Cambridge, Md.*
Hon. E. H. Steiner.....*Frederick, Md.*
Hon. John Daily.....*Oakland, Md.*
Henry D. Farnandis, Esq.....*Belair, Md.*
Hon. A. P. Gorman.....*Laurel, Md.*
Col. Edward Wilkins.....*Chestertown, Md.*
Hon. Nicholas Brewer, M. D.....*Rockville, Md.*
Hon. DeWitton Snowden, M. D.....*Laurel, Md.*
Hon. B. F. Ford.....*Centreville, Md.*
Hon. George R. Dennis.....*U. S. Senate.*
Hon. J. F. Dent.....*Leonardtown, Md.*
Hon. Edward Lloyd.....*Easton, Md.*
Hon. Z. T. Claggett.....*Hagerstown, Md.*
Hon. Humphrey Humphreys.....*Salisbury, Md.*
Hon. William J. Aydelotte.....*Snow Hill, Md.*
Hon. T. G. McCullough.....*Cumberland, Md.*

Faculty.

WILLIAM H. PARKER, PRESIDENT,
Professor of Civil Engineering and Astronomy.

THOMAS M. JONES,
Professor of Agriculture, Architecture and Drawing.

R. E. NELSON,
Professor of Physics and Applied Mathematics.

J. D. WARFIELD, A. M.,
Professor of English Literature, Mental Science and History.

WM. D. MORGAN, A. B.,
Professor of Chemistry and Natural History.

F. VON BROCKDORFF, LL. D.,
Professor of Ancient and Modern Languages.

....
Professor of Mathematics.

THOMAS F. SNYDER,
Assistant Professor of Mathematics and Commandant of Cadets.

C. J. SHIPLEY,
Superintendent of Farm and Instructor in Practical Agriculture.

Military Organization.

MAJ. T. F. SNYDER, - - - - - - - - - COMMANDANT.

The terms of the United States appropriation require military instruction.

The course consists of regular drills and lectures upon tactics and the organization of armies. Military discipline is enforced, and cadets are required to appear at all times in uniform.

For the better instruction in Infantry Tactics and military police and discipline, the Cadets have been consolidated into one company, under the command of the Commandant of Cadets. The officers and non-commissioned are selected from those Cadets who have been most active and soldier-like in the performance of their duties, and most exemplary in their general deportment.

CAPTAIN,

GEORGE THOMAS.

LIEUTENANTS,

E. L. CURTIS, - - - - - - - *Adjutant.*

E. G. EMACK, J. M. WHITE.

FIRST SERGEANT, - - - H. G. SQUIERS.

SERGEANT MAJOR, - - - - - - - J. F. MERCER.

COL. SERGEANT, - - - - - - - - W. G. FOSTER.

SERGEANTS,

SCOTT TRUXTUN,

WILLIAM. H. THOMAS, SAMUEL CISSEL,

T. T. HOUSTON, E. G. BENSON.

CORPORALS,

JAMES CHESTON, R. G. GEASLIN,

F. SOTHORON, F. BREWER,

L. C. MOORE, G. G. DAVENPORT.

Catalogue of Students.

1875-76.

Name.	*Parent or Guardian.*	*Address.*
BAKER, WM.	*Mrs. M. A. Baker*	Washington, D. C.
BELLINGER, O. H.	*C. B. Bellinger*	Portland, Oregon.
BICKNELL, J. D.	*C. B. Bicknell*	Philadelphia, Penn.
BISHOP, L. C.	*Mrs. Ann Bishop*	Springfield, Ohio.
BLAIR, W. J.	*Alexander Blair*	Orangeville, Md.
BLAKE, R. B.	*Mrs. A. E. Blake*	Shufordsville, N. C.
CASON, T. J.	*Hon. F. J. Cason*	Washington, D. C.
CASON, WALTER	*Hon. F. J. Cason*	Washington, D. C.
CATLETT, J. M., JR.	*James M. Catlett*	Catlett Station, Va.
CLAUDE, HERBERT	*Dennis Claude*	Annapolis, Md.
CLARKE, HERMAN	*T. C. Clarke*	Philadelphia, Penn.
CHANCE, T. F.	*Tilghman Chance*	Easton, Md.
COOK, F. M.	*Mrs. A. B. Cook*	New Orleans, La.
COOK, E. S.	*I. M. E. Cook*	Washington, D. C.
COOK, JAY	*A. D. Cook*	Washington, D. C.
CONNESS, D. B.	*John Conness*	Matapan, Mass.
CURTIS, E. L.	*E. J. Curtis*	Boise City, Idaho.
CRAVEN, MACDONOUGH.	*Thomas T. Craven*	Geneva, N. Y.
DELANEY, JOHN POPE.	*Dr. George N. Dox*	Geneva, N. Y.
DEAN, CHARLES.	*J. B. Dean*	Baltimore, Md.
DOTY, G. H.	*Mrs. J. E. Henderson*	Plainfield, N. J.
DOWNMAN, J. B.	*R. W. Downman*	Washington, D. C.
DUVALL, MARIUS.	*Dr. M. Duvall*	Baltimore, Md.
DYER, S. A.	*Mrs. B. Dyer*	Washington, D. C.
EDELIN, P. G.	*Mrs. Ellen Edelin*	St. Mary's, Md.
EMACK, E. G.	*E. G. Emack*	Beltsville, Md.
EMMET, LEROY WM.	*W. J. Emmet*	Pelham, N. Y.
EMORY, E. H.	*Blanch Emory, Esq*	Centreville, Md.

Name.	*Parent or Guardian.*	*Address.*
ESTILL, A. E.	*Capt. W. J. Estill*	Petersburg, Ill.
EYRE, M. K.	*Wilson Eyre*	Newport, R. I.
FINLEY, B. L.	*T. H. Finley*	Washington, D. C.
GARLAND, J. S	*J. S. Garland*	Washington, D. C.
GILLIAM, DONNELL	*Maj. H. A. Gilliam.*	Edenton, N. C.
GUEST, JAMES ALDEN	*Commodore John Guest*	Beltsville, Md.
GUEST, JOHN	*Commodore John Guest*	Beltsville, Md.
HABERSHAM, HARRY S.	*A. W. Habersham*	St. Dennis P. O., Md.
HENKLE, E. J	*Hon. E. J. Henkle*	Brooklyn, Md.
HEWES, M. L	*James E. Hewes*	Hooversville, Md.
HOLMES, I. D	*John L. Holmes*	Wilmington, N. C.
HOLSTON, ROBERT	*Mrs. J. L. Holston*	Hyattsville, Md.
HOLSTON, A	*Mrs. J. L. Holston*	Hyattsville, Md.
HORN, M. L	*Benjamin Horn*	Baltimore, Md.
HORN, J. P	*Benjamin Horn*	Baltimore, Md.
JACKSON, J. M	*J. M. Jackson*	Sligo, Md.
JONES, PEMBROKE	*Mrs. P. K. Dickinson*	Wilmington, N. C.
JONES, J. PAUL	*Reuben Jones*	Catonsville, Md.
JONES, WILLIAM	*Wm. Jones, Esq.*	Poolsville, Md.
JOHNSON, JAMES W	*A. M. Johnson, Esq.*	Chattanooga, Tenn.
MACOMB, A. C.	*Col. A. C. Macomb*	Rock Island, Ill.
MARCHAND, J. T	*Mrs. M. D. Marchand*	Annapolis, Md.
MERCER, JOHN F	*F. S. Mercer*	Washington, D. C.
MORSELL, B. F	*B. F. Morsell*	Washington, D. C.
NICHOLS, A	*G. S. Nichols*	New York, N. Y.
OUTRAM, T. S	*John Outram*	Easton, Md.
PARKER, F. A.	*Commodore F. A. Parker*	Annapolis, Md.
PATTERSON, S. A. W	*Commodore Patterson*	Washington, D. C.
REAMER, M. M	*Samuel R. Fisher*	Philadelphia, Penn.
RICE, F. M	*Frederick Rice*	Baltimore, Md.
ROBINSON, H	*Mrs. Robinson*	San Francisco, Cal.
ROBINSON, W	*Mrs. R. B. Robinson*	Washington, D. C.
SIMPSON, EDWARD	*Capt. E. C. Simpson*	Newport, R. I.
SOTHORON, J. F	*J. H. Sothoron*	Charlotte Hall, Md.

Name.	*Parent or Guardian.*	*Address.*
TAYLOR, J[illegible]	*John S. Taylor*	Richmond, Ky.
THOMAS, T. H	*Mrs. Eleanor Thomas*	Chaptico, St. Mary's, Md.
THOMAS, W. H	*Mrs. Eleanor Thomas*	Chaptico, St. Mary's, Md.
THOMAS, GEORGE	*Mrs. Eleanor Thomas*	Chaptico, St. Mary's, Md.
THOMPSON, P. W	*M. Thompson, Esq*	Washington, D. C.
TRUXTUN, WM	*Capt. W. F. Truxtun*	Norfolk, Va.
VANCE, Z. B., JR	*Hon. Z. B. Vance*	Charlotte, N. C.
WHITE, JAMES	*Archibald White*	Brightwood, D. C.
WHITELOCK, WM	*R. G. Whitelock*	Baltimore, Md.
WILLIAMS, EDWARD	*Hon. Wm. Williams*	Washington, D. C.
WILLIAMS, EUGENE	*Hon. Wm. Williams*	Washington, D. C.
WILSON, H[illegible]	*Rev. Franklin Wilson*	Baltimore, Md.
WINCHESTER, J. P	*J. M. Winchester*	Baltimore, Md.
WORTHINGTON, J. L	*Prof. N. B. Worthington*	Agricultural College, Md.

RECAPITULATION.

Maryland,	32
District of Columbia,	17
North Carolina,	5
New York,	4
Pennsylvania,	3
Virginia,	2
New Jersey,	2
Illinois,	2
California,	1
Idaho,	1
Kentucky,	1
Louisiana,	1
Massachusetts,	1
Ohio,	1
Oregon,	1
Rhode Island,	1
Tennessee,	1
Total,	76

Catalogue of Students.

1876-77.

Name.	*Parent or Guardian.*	*Address.*
BEALL, RICHARD R.	*Thomas J. Beall*	Olney, Md.
BENSON, E. G	*Thomas R. Benson*	Washington, D. C.
BLAKE, R. B	*Mrs. H. E. Blake*	North Carolina.
BREWER, F	*Mrs. Genl. Brewer*	Annapolis, Md.
BURDICK, C. E	*J. H. Burdick*	Dakota Territory.
CATLETT, J. M., JR.	*James M. Catlett*	Virginia.
CHESTON, JAMES, JR.	*James Cheston*	Owensville, Md.
CHOATE, RUFUS		Washington, D. C.
CISSEL, S. N.	*Benj. G. Cissel*	Clarksville, Md.
CLAUDE, HERBERT	*Dennis Claude*	Annapolis, Md.
CRENSHAW, A. P.	*A. P. Crenshaw*	District of Columbia.
CROFUT, GEORGE	*James M. Crofut*	South Carolina.
CURTIS, E. L.	*E. J. Curtis*	Idaho Territory.
DAVENPORT, GEO. G.	*Mrs. J. B. Davenport*	Washington, D. C.
DEAN, CHARLES C.	*J. B. Dean*	Maryland.
DURAND, W. F	*Wm. N. Durand*	Connecticut.
DURBOROW, R. N.	*Wm. Struthers, Esq.*	Philadelphia, Penn.
DUVALL, MARIUS, JR.	*Dr. M. Duvall*	Baltimore, Md.
DRESSER, JAMES W.	*Jas. W. Dresser*	Minnesota.
DYER, S. ALLEN	*Mrs. E. B. Dyer*	Washington, D. C.
EDELEN, P. G.	*Mrs. Ellen Edelen*	Maryland.
EMACK, E. G.	*E. G. Emack*	Maryland.
FOSTER, J. M	*Dr. T. W. Foster*	Kentucky.
FOSTER, W. G.	*Dr. M. W. Foster*	Baltimore, Md.
GEASLEN, R. L.	*Jas. L. Geaslen*	Carroll's Mills, Md.
GILES, A. B.	*W. F. Giles*	Baltimore, Md.
HABERSHAM, H. L.	*A. W. Habersham*	Maryland.
HOLSTON, A.	*Mrs. J. J. Holston*	Maryland.
HOLSTON, R.	*Mrs. J. J. Holston*	Maryland.

Name.	*Parent or Guardian.*	*Address.*
HOOE, EMMETT	*H. M. Hooe*	Maryland.
HORN, J.	*Benj. Horn, Esq.*	Baltimore, Md.
HORN, M.	*Benj. Horn, Esq.*	Baltimore, Md.
HOUSTON, THOMAS T.	*J. H. Saville*	Washington, D. C
HOOGEWERFF, J. A.	*S. E. Hoogewerff*	Baltimore, Md.
JACKSON, J. M., JR.	*J. M. Jackson*	Montgomery county, Md.
JARRETT, BERRIE	*Mrs. A. Bond Jarrett*	Baltimore, Md.
JOHNSON, J. F	*Capt. C. R. Johnson*	Baltimore, Md.
JOHNSON, W. H	*Capt. C. R. Johnson*	Baltimore, Md.
JONES, LLEWELLYN	*Col. Roger Jones*	Baltimore, Md.
JONES, WILLIAM W.	*Wm. T. Jones*	Poolesville, Md.
KEY, ALBERT	*Hon. David M. Key*	Tennessee.
KOEHL, WILLIAM R. A.		Maryland.
KIMBALL, R. S.	*J. H. Kimball*	Wisconsin.
LATHAM, HARRY	*T. J. Latham*	Maryland.
LEACH, JAMES M.	*O. C. Green*	Washington, D. C.
LYON, M. B.	*George A. Lyon*	Washington, D. C.
MARBURY, JOHN B.	*Dr. John W. Bayne*	Port Foote, Md.
MENOCAL, A. N.	*A. G. Menocal*	Washington, D. C.
MERCER, J. F.	*Dr. T. S. Mercer*	Washington, D. C.
MERCER, R. S.	*Mrs. E. J. Mercer*	West River, Md.
MICHLER, R. MC.	*Genl. N. Michler*	Philadelphia, Pa.
MILLER, WILLIAM L.	*Mrs. R. Miller*	Washington, D. C.
MITCHELL, WALLACE	*John W. Mitchell*	Port Tobacco, Md.
MOORE, L. C.	*F. L. Moore*	Georgetown, D. C.
MORALES, J. B.	*A. G. Menocal*	Washington, D. C.
MORSELL, B. F.	*B. F. Morsell*	Washington, D. C.
MCWHORTER, J. G.	*Geo. G. McWhorter*	Georgia.
PARKER, F. A.	*Commodore F. A. Parker*	Boston, Mass.
PELOUZE, LOUIS	*Genl. L. H. Pelouze*	Washington, D. C.
PERRY, JOHN A.	*Gen. Alex. J. Perry*	Connecticut.
RAPLEY, R. R.	*W. W. Rapley*	Washington, D. C.
RICE, F.	*F. Rice*	Baltimore, Md.
RIPLEY, G. H.	*Dr. Z. H. Ripley*	Washington, D. C.
SCOTT, TOWNSEND	*R. S. Scott*	Baltimore, Md.
SCHNEIDER, H. M.	*L. H. Schneider*	Washington, D. C.

Name.	*Parent or Guardian.*	*Address.*
SMEAD, R. C	*Mrs. S. A. Foulke*	Iowa.
SOTHORON, J. F	*Col. J. H. Sothoron*	Maryland.
SQUIERS, H. G	*John A. Squiers*	Minnesota.
SUTPHIN, HARRY	*John H. Sutphin*	New York.
SHIVERS, JOHN	*Mrs. Shivers*	Baltimore, Md.
THOMAS, GEORGE	*Mrs. Eleanor Thomas*	Maryland.
THOMAS, WILLIAM H.	*Mrs. Eleanor Thomas*	Maryland.
TRUXTUN, SCOTT	*Capt. W. Truxtun*	Virginia.
VANCE, C. V	*Charles Vance*	Maryland.
WHITE, J. M	*A. White*	Washington, D. C.
WICKES, JOS. LEE	*P. L. Wickes*	Pennsylvania.
WILLIAMSON, S. H	*George Williamson*	North Carolina.
WITMER, JOS. C.	*C. Witmer*	Washington, D. C.
WOOD, CHARLIE	*C. T. Wood*	Washington, D. C.
WOOD, JOS. L	*Thomas W. Wood*	Virginia.
WOODS, WILLIAM E	*Charles R. Woods*	Ohio.

RECAPITULATION.

Maryland,	37
Washington,	19
Virginia,	3
North Carolina,	2
Pennsylvania,	3
Minnesota,	2
Connecticut,	2
New York,	1
Dakota Territory,	1
Idaho Territory,	1
Kentucky,	1
Tennessee,	1
Wisconsin,	1
Georgia,	1
Iowa,	1
Ohio,	1
Massachusetts,	1
Georgetown,	1
South Carolina,	1
District of Columbia,	1
Total,	81

Graduates of 1875.

JOHN B. GRAY, B. S. F. B. HYDE, B. S.
CHARLES E. LERCH, B. S. LORION MILLER, B. S.

Graduates of 1876.

W. J. BLAIR, B. S. JNO. L. WORTHINGTON, B. S.
T. H. THOMAS, B. S.

Degrees Conferred in Course.

MR. R. SAUNDERS HENRY, A. M.
REV. OLIVER C. MILLER, A. M.

Graduates of 1877.

GEORGE THOMAS, B. S. E. G. EMACK, B. S.
SCOTT TRUXTUN, B. S. R. R. BEALL.

Degrees Conferred.

F. C. NORWOOD, Frederick county, A. M.
L. A. GRIFFITH, Anne Arundel county, A. M.
HORACE M. DAVIS, Montgomery county, A. M.

PART FIRST.

THE

Maryland Agricultural College.

The Maryland Agricultural College.

The College is situated in Prince George County, in full view of College Station, Baltimore and Ohio Railroad, nine miles north of Washington and twenty eight south of Baltimore. Seventeen trains, seven from Washington and ten from Baltimore, stop at College Station daily.

The farm contains 286 acres.

The soil varies in quality and condition, thus affording good opportunity for experiments. There are meadows artificially drained, dry bottom lands and rolling high-lands. Heavy oak timber is in abundance. A large running stream affords sufficient water power. The farm is traversed by the old Turnpike road between Washington and Baltimore. Its proximity to Washington secures for it an interest and influence coextensive with the Nation and affords it many advantages in the Agricultural Department and in the Scientific Institutions and Libraries connected with the General Government.

The building is an imposing structure of brick, of Gothic Architecture, 120 feet long, 54 feet wide, 6 stories high, relieved by an east and south portico. The basement contains the Dining Room, Kitchen, Pantry, Wash Room and Bakery. On the first floor are the Laboratory, Museum, Chapel, Bath Room, Department of Languages and Preparatory Department. On the second floor, the Parlor, Visitors' Room, President's Room, Register's Office, Commandant's Office, Officer of the Day's Room, English, Agricultural and Mathematical Lecture Rooms, Society Hall and Library. The chambers are large, well ventilated, well heated and lighted throughout with gas.

The fruit and flower gardens are varied, attractive and beautiful. A natural forest of oaks gives abundant shade. Mounds, terraces, gravel-walks, interspersed with evergreens, flowering bushes, shrubs, roses, geraniums and other floral adornments combine every requisite of a pleasant home.

Course of Instruction.

The branches of study are grouped under the following departments:

1. Civil Engineering and Astronomy.
2. English Literature, Mental Science, and History.
3. Pure Mathematics.
4. Physics and Applied Mathematics.
5. Agriculture, Architecture and Drawing.
6. Chemistry and Natural History.
7. Ancient and Modern Languages.

The Course of Study embraces the following subjects:

Department of Civil Engineering & Astronomy.

Astronomy.—Descriptive and Practical.

Physical Geography.—Maury and Guizot, with Maps.

Civil Engineering.—Drawing, Materials, Bridges, Railroads, Tunnels, Canals, &c., &c., Running Lines and Curves for Common Roads and Railroads, Levelling, &c., &c. Explanation of Geodetical Surveys; practical work in Surveying and Plotting, &c., &c.

Lectures.

TEXT-BOOKS.

Lockyer's Astronomy; Herschel's Outlines; Chauvenet's Practical Astronomy; Loomis' Surveying; Gillespie's Surveying; Mahan's Civil Engineering; Rankine's Civil Engineering.

Department of English Literature, Mental Science and History.

ENGLISH.—The History, Usage, and Grammatical Structure of the English Language; History of English Literature; Rhetoric; Composition; Elocution.

MENTAL SCIENCE.—Mental and Moral Science; Logic; History of Philosophy.

HISTORY.—History of Greece, Rome, England, United States; Outlines of History; History of European Civilization.

LAW.—Commentaries on Constitution of United States; Constitution of Maryland.

LECTURES.

TEXT-BOOKS.

ENGLISH.—Abbott & Seeley's English Lessons; Shaw's History of the English Language; Taine's English Literature; Hart's Composition and Rhetoric; Marsh's Lectures upon the English Language.

MENTAL SCIENCE.—Upham's Mental Philosophy; Seeley's Schwegler's History of Philosophy; Schuyler's Logic; Hamilton's Lectures; Haven's Moral Philosophy; Butler's Analogy.

HISTORY.—Freeman's General Sketch; Hume's England; Smith's Greece; Liddell's Rome; Guizot's European Civilization.

LAW.—Story on the Constitution; Constitution of Maryland; Political Economy.

Department of Mathematics.

ALGEBRA.—Reduction and solution of Equations of the first and second degrees; Proportions and Progressions; nature and construction of Logarithms; and the theory of Equations.

GEOMETRY.—Plane and Solid.

TRIGONOMETRY.—Analytical investigation of Trigonometrical Formulas, and their application to the solution of all the cases of Plane and Spherical Trigonometry; the Construction and Use of Trigonometrical Tables.

APPLICATION OF ALGEBRA AND TRIGONOMETRY.—Mensuration of Planes and Solids.

DESCRIPTIVE GEOMETRY.—The graphic illustration and solution of problems in Solid Geometry; Projections of the Sphere.

ANALYTICAL GEOMETRY.—Equations of the Right Line, Plane and Conic Sections; principal problems relating to the Cylinder, Cone, Sphere and Spheroids.

LECTURES on Shades, Shadows and Perspective.

BOOK-KEEPING.

TEXT-BOOKS.

Loomis' Algebra; Ray's Higher Algebra; Todhunter's Algebra Schuyler's Geometry; Loomis' Geometry; Chauvenet's Geometry Loomis' Trigonometry and Mensuration; Chauvenet's Trigonometry Church's Descriptive Geometry; Loomis' Analytical Geometry; Todhunter's Conic Sections.

BOOK-KEEPING.—Hanaford and Payson.

Department of Physics and Applied Mathematics.

THE DIFFERENTIAL AND INTEGRAL CALCULUS.—The principles of the Differential Calculus, including Taylor' Theorem, application to Problems of Maxima and Minima, and the tracing of Curves; the methods of Integration, and the application of the Integral Calculus to Areas, Surfaces and Volumes, and to the finding of Centres of Gravity and Moments of Inertia, and to the simpler cases of Differential Equations.

MECHANICS.—Statics; Dynamics.

HYDROSTATICS.—Mechanical Properties of Fluids; Specific Gravity, &c., &c.

ACOUSTICS.—The production and propagation of Sound; modes of Vibration, &c., &c.

OPTICS.—Lenses, Vision and Optical Instruments; Spectrum Analysis; Color, &c., &c.

ELECTRICITY AND MAGNETISM.—Magnetism; Voltaic Electricity, &c., &c.

HEAT.—Theories of Heat; Sources of Heat; Instruments used for the Measurement of Heat; Thermo-dynamics.

TEXT-BOOKS.

Loomis' Differential and Integral Calculus; Courtenay's Calculus; Buckingham's Calculus; Well's Natural Philosophy; Ganot's Natural Philosophy; Cambridge (England) Course of Elementary Natural Philosophy; Todhunter's Mechanics for Beginners; Rankine's Applied Mathematics; Smith's Hydrostatics; Bartlett's Acoustics and Optics; Jenkins' Electricity and Magnetism; Maxwell's Theory of Heat; Peck's Mechanics.

Department of Agriculture, Architecture and Drawing.

AGRICULTURE.—General Agriculture; Civil Engineering, applied to Farm Roads, Bridges, Embankments, Drainage, etc.; application of Chemistry to Agriculture; use of Implements; Breeding and Care of Stock; Dairy; Gardening; Fertilizers; Botany; Horticulture; Geology; Arboriculture; Exercises on the Farm, &c., &c.

LECTURES on Veterinary Medicine and Surgery, and on the relations of Agriculture to Commerce, Manufactures, Labor, &c.

ARCHITECTURE.—Drawing; Materials, Masonry, Carpentry, Foundations, Orders, etc.

LECTURES.

TEXT-BOOKS.

The Progressive Farmer, by J. A. Nash; Connection between Science and the Art of Practical Farming, by J. P. Norton; Chemical and Field Lectures, by James E. Leschemaker; Farmers' Guide, by H. Stephens and Prof. Norton; Farm and Fireside, by John L. Blake; Allen's American Farm Book; How Crops Grow; The Plough, the Loom and the Anvil, by J. S. Skinner & Sons; Youatt and Martin on the Horse, Cattle, &c.; Peter Henderson on Gardening for Profit; Architecture and Right Line Drawing, by Walter Smith.

Department of Chemistry and Natural History.

CHEMISTRY.—Organic and Inorganic Chemistry; Qualitative and Quantitative Analysis; Detection and Separation of the Elements; Manufacture and application of Manures; Manufacture and Application of Chemicals; Blow Pipe; Organic, Volumetric, Microscopic and Spectroscopic Analysis; Chemistry applied to the Arts and Manufactures; Agricultural Chemistry; Toxicology.

NATURAL HISTORY AND SCIENCE.—Zoology; Mineralogy; Physiology; Metallurgy; Photography; Telegraphy and Printing.

TEXT-BOOKS.

CHEMISTRY.—Fownes,' Fresnius', Steele's.
AGRICULTURAL CHEMISTRY.—Johnston's.
ZOOLOGY.—Nicholson's Text Book.
MINERALOGY.—Dana's.
PHYSIOLOGY.—Flint's.
METALLURGY.—Percy's.
TELEGRAPHY.—Culley's.
SPECTRUM ANALYSIS.—Roscoe's.
MICROSCOPIC ANALYSIS.—Carpenter's.
VOLUMETRIC ANALYSIS.—Sutton's.
BLOW PIPE ANALYSIS.—Elderhorst's.
TOXICOLOGY.—Taylor's.

Department of Ancient and Modern Languages.

LATIN.—Grammar, Reader, Cæsar, Ovid, Virgil, Cicero, Horace, Sallust, Livy, Tacitus.

FRENCH.—Grammar, Reader, Classics, Colloquial Exercises.

GERMAN.—Grammar, Reader, Classics, Colloquial Exercises.

TEXT-BOOKS.

Fasquelle's Grammar; De Fivas' Grammar; Collott's Dramatic French Reader; Erkmann-Chatrain's Le Conscrit; Ollendorf's German Course; Cæsar; Ovid; Cicero, &c., &c.

The Course of Instruction extends over four years, and the course for each year is as follows:

Freshman Class.

SCHOOL OF ASTRONOMY, &c.—Physical Geography.

SCHOOL OF ENGLISH LITERATURE, &c.—English Lessons; Composition; Rhetoric; Outlines of History; Elocution; History of England.

SCHOOL OF MATHEMATICS.—Algebra; Geometry; Plane Trigonometry; Mensuration; Book-Keeping.

SCHOOL OF PHYSICS, &c.—Elementary Natural Philosophy.

SCHOOL OF AGRICULTURE.—Botany; How Crops Feed and How Crops Grow, and Gardening for Profit; Exercises on the Farm.

SCHOOL OF CHEMISTRY.—Organic and Inorganic Chemistry; Zoology.

SCHOOL OF LANGUAGES.—Latin, (optional,) French or German.

Sophomore Class.

SCHOOL OF ASTRONOMY, &c.—Field Surveying.

SCHOOL OF ENGLISH, &c.—Rhetoric; Composition; Elocution; History of Greece; History of Rome.

SCHOOL OF MATHEMATICS.—Spherical Trigonometry; Descriptive Geometry; Analytical Geometry.

SCHOOL OF PHYSICS.—Todhunter's Mechanics for Beginners; Optics; Acoustics; Hydrostatics; Electricity and Magnetism.

SCHOOL OF AGRICULTURE, &c.—Geology; Exercises on the Farm; Allen's Farm Book; Stephen's Farmers' Guide.

SCHOOL OF CHEMISTRY, &c.—Qualitative Analysis; Detection and Separation of the Elements; Agricultural Chemistry; Manufacture and Application of Manures; Mineralogy.

SCHOOL OF LANGUAGES.—Latin, (optional,) French or German.

Junior Class.

SCHOOL OF ASTRONOMY, &c.—Practical Astronomy.

SCHOOL OF ENGLISH LITERAURE, &c.—Mental Philosophy; History of the English Language; History of English Literature; History of Civilization in Europe; Essays and Declamation.

SCHOOL OF MATHEMATICS.—Shades, Shadows and Perspective.

SCHOOL OF PHYSICS, &c.—Differential and Integral Calculus.

SCHOOL OF AGRICULTURE, &c.—General Agriculture; Horticulture; Arboriculture; Landscape Gardening; Lectures on Veterinary Anatomy; Physiology and Surgery; Exercises on the Farm.

SCHOOL OF CHEMISTRY, &c.—Qualitative and Quantitative Analysis; Organic Analysis; Blow Pipe Analysis; Manufacture and Application of Chemicals; Physiology; Metallurgy; Toxicology.

SCHOOL OF LANGUAGES.—Latin, (optional,) French or German.

Senior Class.

SCHOOL OF ASTRONOMY, &c.—Civil Engineering.

SCHOOL OF ENGLISH LITERATURE, &c.—History of Philosophy; Moral Philosophy; Logic, Essays; Original Declamation.

SCHOOL OF PHYSICS, &c.—Rankine's Applied Mathematics.

SCHOOL OF AGRICULTURE, &c.—General Agriculture; Civil Engineering applied to Farm Roads, Bridges, &c., &c.; Architecture, Lectures on the relation of Agriculture to Commerce, Manufactures, &c.; Exercises on the Farm.

SCHOOL OF CHEMISTRY, &c.—Chemistry applied to the Arts and Manufactures; Quantitative Analysis; Volumetric, Microscopic and Spectroscopic Analysis; Assays—Telegraphy; Photography.

SCHOOL OF LANGUAGES.—Latin, (optional,) French or German.

Degrees.

I. The Degree of Bachelor of Arts will be conferred upon those who graduate in all the Schools.

II. The Degree of Bachelor of Science will be conferred upon those who graduate in the Schools of Astronomy and Civil Engineering, English Literature, Mathematics, Physics, Chemistry, and Languages.

III. Any student who passes satisfactory examinations in the Schools of English, Mathematics, Agriculture, and Chemistry, will be declared a Graduate in Agriculture.

IV. Those who take the Degree of Bachelor of Arts or Bachelor of Science, and maintain for three years thereafter the character of a student, will be entitled to the Degree of Master of Arts or Master of Science.

Examinations.

A semi-annual examination, in the presence of the Faculty, is held the last week of the first term.

Monthly examinations at the blackboards are required in all the departments.

The Annual Examination begins about June 15th, and ends June 25th, and is both written and oral.

No student who fails to pass a satisfactory examination at the end of each term, is allowed to continue with his class.

Marks.

The scale of marks for recitation and exercises ranges from 4 to 0. A mark of 4 indicates thoroughness; 0, a total failure; the intermediate numbers indicate absolute values.

A mark of 2.5 represents the minimum of proficiency. Students whose final average for the term or year in any branch falls below that number, are liable to be turned back to the next class.

Merit-Rolls.

At every annual examination, the Faculty will form a merit-roll of each class in the following manner:

The final average of each Student in each branch for which a coëfficient is assigned in the table of coëfficients, shall be multiplied by such coëfficient, and the sum of the products, after making the deduction for conduct, shall be the final multiple for the year.

The names of the Students will be arranged according to the final multiple, the highest multiple being placed first on the list, and the others in their order; but no class number will be assigned to any found deficient.

Monthly Reports, showing the progress and standing of Students, will be sent to parents.

Attention is respectfully called to these reports.

Vacation and Terms.

The Scholastic Year is divided into two terms. There will be but one regular vacation, beginning the last week of June, and closing about the middle of September. There will also be a short intermission at Christmas and Easter.

The first term will open on the 20th of September, and close with the month of January. The second term will begin 1st of February, and end with the College year, the last of June.

When parents or guardians wish students to visit home, a letter to that effect should be addressed to the President.

Expenses.

PAYABLE IN ADVANCE.

For Students from the State of Maryland and District of Columbia:

First Term.—Board, Lights, Washing, use of Furniture and Room Rent, ...	$100 00
Matriculation Fee, ...	5 00
Total, ...	$105 00

Second Term.—Same as the first, less the Matriculation Fee.

For Non-Residents of the State of Maryland and District of Columbia:

First Term.—Board, Tuition, &c., ...	$125 00
Matriculation Fee, ...	5 00
Total, ...	$130 00

Second Term.—Same as first, less the Matriculation Fee.

Students from the State of Maryland and District are received free of charge for tuition.—They are allowed, also, the use of books; but it is recommended that they should purchase the same, if in their power.

Day scholars will be charged two dollars a month for use of rooms, fuel, &c.

Students having a constant fire in their rooms will be charged two dollars a month extra.

Prepayment in every case will be required, unless satisfactory arrangement be made with the President of the Faculty for settlement by note at short date.

No deduction will be made for absence, except in case of protracted illness; nor will money be refunded in case a student be withdrawn or dismissed during the term, unless at the discretion of the President.

Special damages are assessed on those who unnecessarily injure or destroy College property.

Uniform and other Clothing.

As the students are required to wear a prescribed uniform habitually, it is only necessary to bring a full supply of *underclothing.* Arrangements are made with a competent Tailor who supplies the uniforms at the lowest prices. The cost of uniform, with cap complete, is $25. Each Student will require two suits for the year.

Students must bring a supply of towels, napkins, bed-linen and *white Berlin gloves;* all articles of clothing must be marked.

Requisites for Admission, &c.

Students will be received, examined and assigned to their proper classes at any point in the College course; but no Student who cannot pass a good examination in Reading, Writing, Arithmetic, Grammar, Geography, and History of the United States, will be allowed to begin the course. All not so qualified will be entered in the Preparatory Department. A room having been fitted up for this purpose, special instruction will be given all those who wish to prepare for the Freshman Class. Nine applicants were enrolled at the beginning of the year. The progress made warrants the belief that all these candidates will successfully pass the necessary examinations in September next.

Applications for admission, or for further information, should be addressed to the President of the Maryland Agricultural College, College Station, Prince George County, Maryland.

Fire Brigade.

The Fire Brigade includes in its organization every person connected with the College and Farm. Students, at the fire-

alarm, proceed to such stations as are designated in the fire-bill. Exercises in fire-drill will take place at such time as the President may direct.

Dispensary.

The Professor in charge of the Dispensary will visit, report and attend all cadets unfit for duty by sickness.

Religious Service.

Daily morning prayers and Divine Service, on Sunday, are regularly held in the Chapel. Students are required to attend unless a written request to the contrary be made. Students shall observe the Lord's day with decorum.

Discipline.

The following laws will strictly be enforced by the officer-in-charge.

1. Students shall not go beyond the limits of the Farm; use fire-arms; sit up after taps; use the South Portico; hold any general meeting; loiter in the halls; visit the dining room or kitchen, without permission from the President.

2. Profane language, card playing, gambling, intoxication, or any of their attendant vices, will not be tolerated by the Faculty. Any Student known to indulge in habits injurious to the morals of the College, or calculated to destroy its established order, shall be immediately dismissed.

3. Destruction of property, disorderly conduct, in the halls, on the grounds, on furlough, or any other violation of the published orders of the President, or officer-in-charge, will be punished by tasks, demerits, guard duties, and such other punishments as the Faculty may decide.

4. Members of the Faculty and all officers-in-charge are required to report any violations of these regulations.

5. Upon Matriculation, each Student will be furnished with a copy of these and other regulations, and will be expected to obey them.

PART SECOND.

Reports of Faculty.

Report of the President.

MARYLAND AGR. COLLEGE,
June 6th, 1877.

To the Board of Trustees:

GENTLEMEN: In accordance with the By-Laws of this Institution, I have the honor to submit the following Report:

During the past year the number of students registered on our books is 81. Every department is in good working order, and the discipline of the school is excellent.

In order that the condition of the several departments may be more fully shown, I have requested their Heads to submit separate reports. It is, therefore, unnecessary for me to dwell longer upon this point, except to call your attention to the want of proper appliances, such as Astronomical Instruments, Philosophical Apparatus, Maps, &c., which, so far, we have been unable to supply, and which is among the many disadvantages we have labored under since I assumed charge of this College.

The Registrar will lay before you a report showing the condition of the finances, from which you will see that the College is now entirely out of debt, (having in two terms paid an old debt of $13,274.33,) and with a balance in our favor.

Although this balance is not as large as I had anticipated, yet when we consider the depressed financial condition of the country during the past two years, we have, I think, every reason to feel satisfied. Moreover, it is but fair to take into consideration the fact that we have 21 acres of wheat, 15 acres of oats, 26 acres of corn, and 12 acres in garden stuff, all highly fertilized and all paid for.

The College and furniture are in good repair, and can be gotten ready for the reception of students next session at small expense. The *financial* credit of the College is, at least, re-established.

With this fact in view, one would suppose that the farmers of this State would feel an increased interest in the College and a desire to assist in its advancement; yet, if the county papers indicate the sentiment of the State, it is far otherwise.

Although the debt has been paid, and a large amount of money expended on the farm, we find a disposition, constantly, to underrate this College.

The Faculty, using every energy of mind and body to re-establish the College, and exhibiting great self-denial by serving for almost nominal salaries, find that instead of receiving a helping hand from the community, constant attempts are made to "pull down" as fast as they "build up."

The avowed cause for this opposition is: first, that agriculture is not taught; secondly, that students are received for West Point and Annapolis; thirdly, that it is a Military School.

During the two years I have had the honor to serve you as President of the Faculty, I have not replied to these attacks. Having devoted myself to the task of first clearing the College of debt, while improving every department in it, I have felt that my proper course was to remain at my post; at the same time, I confess that I have hoped that as time wore on, and all who knew anything of the College must see its improvement in every respect, that these unjust attacks would cease.

The time has now come when, in justice to myself and the gentlemen assisting me, it is proper that I should lay before you a few *facts*, in order that there may be no further misapprehension, and in the belief that they will commend themselves to all fair-minded men.

First: It is said that Agriculture is not taught; that experiments are not made, &c., &c.

At the last meeting of the stockholders, Mr. Howard McHenry offered the following resolution: "That the Board of Trustees be requested to make instruction in practical and experimental agriculture the *leading* feature in the educational system at the earliest possible moment."

As this resolution was presented at the close of the meeting, no opportunity was offered for a reply; but I do not concede the point that I have not endeavored to make experimental and practical agriculture the *leading feature* here during my administration.

Before going further, however, I wish to say how much gratified I was to see that such noted agriculturists as Hon. A. B. Davis, Mr. Howard McHenry and Mr. Wm. B. Sands voted to sustain the present Board of Trustees, and, to that extent, my administration; and I beg leave to call your attention to the generous remarks made by Hon. A. Bowie Davis on that occasion.

In my *first* report to the Board of Trustees, September 8, 1875, I say: "As agriculture is to be the principal department and the specialty of the College, great pains will be taken to interest *all* the students in it. To this end there will be daily recitations in some one of its branches, and public lectures once or twice a month by distinguished non-resident lecturers. Moreover, the Professor of Agriculture (himself a practical farmer) will be expected to make his pupils familiar with all the workings of a farm by taking them into the field daily; they are to witness all the experiments made; learn the management of a dairy, care of cattle, construction and use of agricultural implements and how to repair them, plant crops, &c., and generally, carry on the farming business intelligently."

"Students will be encouraged to *work*."

"I shall hope to have the advice of individual members of the Board of Trustees at all times, particularly on the subject of agriculture."

Report December 8, 1875.—"While *all* the classes are studying branches relating to agriculture, such as Botany, Chemistry, &c., there is also a special one in practical agriculture, consisting of all the members of the Senior and Sophomore classes, and one from the Freshman.

The members of this class are taken over the farm, and practically instructed in the care of sheep and cattle, making

roads and bridges, embankments, draining lands, &c, and the winter care of a farm.

They have been sent to the Agricultural Department in Washington, under their Instructor, and it is intended to send them in as often as the Professor finds necessary to illustrate his lectures.

Lectures on subjects relating to agriculture have been delivered by Professors Tonry and Uhler, and will be continued monthly throughout the session.

When the spring opens and farming operations commence, all classes will be taken into the field, and practical labor encouraged.

The work done in the fall, such as threshing out grain with a machine, putting in wheat, &c, was witnessed by the entire School, and the manner of putting in the grain and the use of the drill fully explained to all.

I do not propose putting in large crops of grain for the present. It seems to me that we should make our farm an *experimental* one *now;* eventually, it will be a model one, I hope."

Report September 19th, 1876.—"I have to request that the Board of Trustees will appoint a permanent Committee on Agriculture, that I may have the advice and assistance of the gentlemen composing it in carrying on the farm."

Report December 6th, 1876.—"The Faculty agree with me as to the importance of making agriculture the leading feature of the College."

"All students without exception are required to attend the lectures on this subject."

The report of the Professor of Agriculture will show how far he has succeeded in carrying out the above views. You will see that, at least, some experiments have been made, and that our students have planted corn, helped in the farm-yard and garden, and ploughed the land; and, at the same time, have made daily recitations in theoretical agriculture.

In relation to the number of hours we can reasonably devote to manual labor on the farm, permit me to quote the

following extract from the catalogue of the McDonogh Institute, January, 1877:

"During the session of the school, which extends over ten months of the year, the out-door work required of the boys is little, and is not allowed to interfere with school duties—the conviction being entertained that it would be unwise to require any considerable amount of manual labor of boys while their energies are fully occupied with study. The result of such a requirement would be to cripple the efficiency of the school without securing any compensating advantage."

I do not intend to say that we have accomplished as much as we desire in agriculture; on the contrary, I speak for the Faculty when I say that we intend to improve every department of this College until we have attained the highest standard.

Our curriculum in theoretical agriculture cannot, I believe, be improved upon.

In the thickly populated parts of Europe, such as Belgium, where the land has been under cultivation for centuries, artificial means must be constantly used to renew it; consequently, we find there a cultivated and scientific corps of instructors in agriculture; but in this country, the chair is confessedly a most difficult one to fill, and the gentleman filling it will labor under many disadvantages, and be the subject of constant criticism.

My experience is, and I know it to be the experience of every President of an Agricultural College in the country, that the fault is not so much that Agricultural Colleges are not prepared to do all that is required of them, as that so few parents desire to make their sons farmers; certain it is, that a resolution to receive *only* those intending to become farmers would close every Agricultural College in the country.

A recent writer says in this connection: "The Scientific School has been grafted on to the College; there are departments for instruction in mechanics; departments and schools for instruction in agriculture. Yet the fact must be noted

that nearly all these special schools have been more or less unsatisfactory; not because their aim was not good, but because not enough was accomplished. The Agricultural Schools, when separated from other departments, languish; and there is not a flourishing school of mechanics separated from other departments in the whole country.

The truth is that when you give the great body of students their choice of educational facilities, they will accept those of the widest scope. If you give a boy a good English education, he has been working in the right direction for a farmer, mechanic, or a merchant."

My observation is that few boys have any very decided bent: their future professions or trades being more the matter of accident than design; but, I believe that boys attending an Agricultural School for a term of years, where every thing about the farm is kept in perfect order; where the best stock is always before their eyes, and where experiments are constantly going on, are apt to acquire a taste for a farmer's life—and, this is one of the things an Agricultural College *can* accomplish.

As to the importance of using every means to cultivate this taste, there is no question. Thomas Jefferson called the attention of the country to it seventy years ago, and the need is much more pressing now than then.

This College receives from the State a donation of $6000, and from interest on U. S. land scrip, $7288.44; making a yearly revenue of $13,288.44, *and educates all boys from the State free of tuition!*

The Massachusetts Agricultural College has a yearly revenue of $25,678.66 and asks for a further appropriation of $5000; the President occupies the chair of Botany and Horticulture, and the Professors receive a salary of $2250.00.

The Ohio Agricultural College has a revenue of $40,538.88 —the President occupies the chair of Geology, and the Professors receives $2500.00.

The Kansas Agricultural College has a revenue of $25,252.50 —the President occupies the chair of Political Economy.

The Pennsylvania Agricultural College has a revenue of $30,000.00—the President occupies the chair of Mental and Moral Science, and the Professors receive $2000.00.

The Iowa Agricultural College has a revenue of $77,118.13—the President occupies the chair of Political Economy and Psychology, and the Professors receive $2000.00.

The McDonogh Institute Trust Fund is $824,029.74.

An inspection of the catalogues of most of the Agricultural Colleges shows that they frequently receive donations of Stock, Agricultural Implements and Books. The late Dr. Mercer bequeathed $1000 to this College. With this exception, and some donations of improved stock, it has never received anything from private sources, so far as I have been able to learn. Donations of Stock and Agricultural Implements would be particularly acceptable, and we will be glad to try the latter and report upon them.

Secondly. It is complained that students are received here and prepared for West Point and Annapolis.

We have nine boys preparing for the Annapolis examination; none, at present, for West Point, but have had one. In relation to these students, I can only repeat what I have before said: they are taught nothing nautical, but are entered in the Freshman Class and pursue the branches of that Class, viz: English Grammar, Geography, Arithmetic, Algebra, Geometry and Natural Philosophy; and all attend the lectures on Agriculture. Most of them come from other States; and, having no claim upon this State to receive their tuition *free*, are charged $25 per month, extra. These extra fees have paid the Professors' salaries, and enabled me to devote the State donation to the payment of the old debt. Yet some of the papers persist in saying that we are using the money of the State to educate boys for the Army and Navy!

No College in the country could, or would refuse to receive these students.

Thirdly. It is complained that this is a military school.

By our charter we are *required* to teach military tactics. The advantages of military discipline are so apparent that

the best schools in the country are adopting it. Its good effects have been very apparent here. It affords a healthful exercise, and creates an *esprit de corps.*

Our students are drilled 40 minutes daily, except Saturdays and Sundays, between 12 and 1 P. M. in winter, and between 6 and 7 P. M. in summer. Military duties here have become almost entirely voluntary.

As to the charge that it interferes with their other studies, I can only say that if we were to abandon it now, the hours for recitation and study would remain unchanged; in point of fact, they are precisely the same now as when there were no military exercises here, whatever.

In my report of March 8, 1876, referring to the importance of having a well-defined plan for the development of the Agricultural Department of the College, I say: "Speaking generally, I should say that we should keep the following objects in view:

1st. To pay off the debt.
2nd. To put the College and farm in complete order and repair.
3rd. To dispose of the present stock and replace it with thorough-breds only.
4th. To lay off a part of the farm for experiments.
5th. To put up a work-shop and printing-press.
6th. To establish a nursery and greenhouse."

I leave it to you, gentlemen, to say how far I have been successful in my attempt. You well know that what has been accomplished has been under the most adverse and discouraging circumstances.

My attention was called, over a year ago, to the importance of having an experimental station established here, and in the May number of the American Farmer, two admirable articles appear on the subject.

Last March I read an editorial in the "Massachusetts Ploughman," which is so applicable to the condition of affairs in this state, and is so much better expressed than I can do it myself, that I am induced to quote it here—al-

ways begging you to bear in mind the fact, that the Massachusetts Agricultural College has a vastly larger revenue than ours, and is much better equipped in every respect.*

Experimental Stations.—We have already alluded to the annual report of the trustees of the Massachusetts Agricultural College. On the subject of experiments on the College Farm, they say the great want of Massachusetts Agriculture is a series of accurate, careful and scientific experiments, extending over a sufficient period of time to determine positively and authoritatively the vast number of questions that are constantly coming up in the experience of every farmer and every gardener who cultivates the soil. There is a vague notion among the people that this is the work of the Agricultural College, and that it is the peculiar duty of that institution to arrange and carry on a broad system of investigation and experiment, as if it had no other work to do, and with all the appliances which an adequate plan of experiment implies.

The College has never refused, nor is it at all inclined to refuse, to meet the wants of the farming community in this direction. It should be borne in mind, however, that experiments to be of any value, require not only great time and ability, but a liberal expenditure of money, and that the Trustees have absolutely no money at their disposal for this purpose.

Could the College Farm, or a portion of it, be recognized and established as an Experimental Station, and provided with the requisite means, it would go far to meet the great and growing public want, and do more real good for the agriculture of the present and the future of the Commonwealth than any other agency. Experiment stations are recognized as a necessity, and sustained as such by the most enlightened governments in the world. A very large part of the progress and development of German agriculture during the last quarter of a century is due directly to the liberal

*Note.—The Massachusetts Legislature has just passed a bill giving the College $2500 a year, "to pay for the manual labor of the students."

support of experiment stations. They form a conspicuous feature of the comprehensive system adopted by the government for the development of the agricultural resources of the empire. The results have abundantly justified their organization, and placed the farming of Europe in the front rank among the industries of all civilized nations.

In 1851, fully a quarter of a century ago, the first experiment station was founded at Mæckern, in Saxony, and it soon proved to be so useful, and secured the confidence of the common people to such an extent, that the idea soon spread through Germany and into other countries, till, in 1868, there were no less than 28 stations in full and successful operation, and now the number is increased to 62, sustained largely by governments, but with the co-operation of individuals and agricultural societies. They have proved themselves of immense service and are rapidly increasing in number and efficiency, while at the same time the agricultural colleges and schools are more numerous and better sustained than they are in this country.

But an experiment station costs money. The Trustees of the Agricultural College have not the means to organize it without the aid of the Legislature. The French government, always studious of the interests of the people and its own financial strength, sent a thoroughly competent man, M. Grandeau, to visit and study the experimental stations of Germany, and he reported to the French Minister of Agriculture that a useful station could be started for $6000, and that it would cost about $3000 a year to maintain it. The expenses of the Prussian stations vary from $800 to $4000 a year, according to the completeness with which they are organized and equipped, and the number of scientific men employed. They would cost more in this country, but the cost will depend very much upon the amount and kind of work required of them.

The work of an experiment station requires not only land sufficient for field operations, but, especially, chemical and physiological laboratories. All these appliances are at hand

at the Agricultural College, and it would involve little additional outlay on the part of the State or the College to organize a station on the most thorough basis. The quantity of land required for experimental purposes is not large. A portion of the College Farm could be set apart for these objects without material detriment to the interests of the institution, while the laboratories would furnish immediate facilities for scientific investigation.

Every farmer recognizes the fact that most field experiments, to be of any great, general and permanent value, require to be carried on through a series of years and that they require great expense. But that they pay, and pay abundantly, for the outlay, is now universally recognized by farmers throughout Germany, who contribute largely and cheerfully for their support in the form of small fees for analysis. It may be stated, also, that the work of the German stations has become thoroughly systematized by the division of labor, each one taking some special line of investigation and leaving other specialties to other stations. The station mentioned as having been first founded at Mæckern, for instance, now confines itself chiefly to studies and experiments in the nutrition of animals, and some of the stables on the farm are set apart for the cattle required. Other stations are confined specially to experiments in fertilizers and the nutrition of plants, to animal and vegetable chemistry and physiology. Agricultural research, the discovery of new truth and the test of older theories, is the work of them all, to be sure, but the field is so vast that experience has dictated the economy of division of labor, and so it may be argued that we need numerous stations in various parts of the Commonwealth, and it is true, but we shall never have a system of such invaluable institutions unless we make a beginning in the establishment of one, and true economy would dictate its location in connection with the Agricultural College, where the requisite scientific appliances are already at hand.

Now the practical point is that such a Labor Fund as we have suggested would serve a most admirable purpose in car-

rying out this very object. The income of such a fund could be directed to the payment of the labor and time of students who would be capable, under competent scientific direction, of conducting experiments in a satisfactory manner, while, at the same time, their work would be educational in its character, and of invaluable service to the agricultural community. The time cannot be far distant when the system of agricultural experiment stations, which has been found so valuable and so serviceable in Europe, will be recognized and adopted here. When it *does* come it will do more than anything else to promote the rapid development of the resources of the Commonwealth."

Next year, I propose to lay off ten acres for experimental purposes. This land will be altogether cultivated by the students. We will have weekly lectures on agriculture, and daily recitations and field work. Every inducement will be offered to young men of the State who wish to pay a portion of their expenses by working on the farm. Some have already availed themselves of this privilege. We also hope to put up some new buildings for our farm hands, and, if possible, will have the work done by the students alone.

Photography and Telegraphy will be taught, and, if permission can be obtained, we will establish a connection between the College and one of the telegraph lines.

To the end that I may more fully carry out Mr. McHenry's resolution and your wishes, I recommend that Mr. C. J. Shipley, of Baltimore county, be appointed Farm Superintendent and assistant instructor in practical agriculture.

At the last meeting of the stockholders, an attempt was made to contrast the salaries of the chairs of mathematics and agriculture. Although I failed to see the point of the argument, I am reminded by it to call your attention to the fact that the chair of mathematics has been vacant since last June.

As the duties are performed by the Professors of Civil Engineering and Physics, with the aid of an assistant professor, I recommend that it be not filled for the present.

Our Commencement Exercises will be as follows:

SUNDAY, June 24th. Baccalaureate Sermon by Rt. Rev'd Bishop Pinkney.

MONDAY, June 25th. An address before the Mercer Literary Society by S. T. McCullough, of Annapolis.

TUESDAY, June 26th. Commencement Day.

1. Addresses by the graduating class, four in number.
2. Delivery of Diplomas and Conferring Degrees by His Excellency, Gov. Carroll.
3. Oration by Hon. A. B. Hagner, of Maryland.

The Faculty propose to confer the degree of B. S. upon Messrs. George Thomas, Scott Truxtun and E. G. Emack, of the graduating class; and the degree of A. M. upon Messrs. F. C. Norwood, of Frederick county; L. A. Griffith, of Anne Arundel county, and Horace M. Davis, of Montgomery county, —they having sent testimonials to the effect that they have maintained the character of students since graduating.

In conclusion, I beg to thank the Faculty for their zealous co-operation; and you, gentlemen of the Board of Trustees for your kind support; and in the hope that confidence may be restored between the farmers of the State and the Agricultural College, I am,

Respectfully, your obedient servant,

WM. H. PARKER, *President.*

Statement

SHOWING THE FINANCIAL CONDITION OF THE COLLEGE TO 1ST JUNE, 1877.

DR.	DOLLS. CTS.	CR.	DOLLS. CTS.
Amount due by College to June 1, 1877	10,122 36	State appropriation	6000 00
Balance, after paying debts	2146 71	Interest due July 1, 1877.	3601 94
		*Amount due from students prior to 1876 and 1877	1453 86
		Amount due by students during session 1876 and 1877	963 27
		Amount on hand May 25, 1877	250 00
	$12,269 07		$12,269 07

THOMAS M. JONES, *Register.*

*NOTE.—Of this sum it is probable that $1104.69 will never be collected.

THOMAS M. JONES, *Register.*

Approved.

WM. H. PARKER, *President.*

Report of Prof. of Civil Engineering and Astronomy.

MARYLAND AGR. COLLEGE,
June 6th, 1877.

To the Board of Trustees:

GENTLEMEN: In my department, the Senior and Sophomore Classes have finished Lockyer's Descriptive Astronomy and have had a course of lectures on Practical Astronomy; they have also surveyed the farm.

Professor Nelson has assisted in this department and has carried the senior class through a course of Civil Engineering.

We want some of the simpler astronomical instruments, such as a telescope, sextant, portable transit instrument, &c., but I do not propose to purchase them until we can put up a small observatory—this I hope to do in the course of a year.

We have a surveyor's compass, chain, theodolite, &c., but want a level, the cost of which will be $60.

There being no Professor of Mathematics, the duties have been performed by Professor Nelson and myself, aided by Assistant Professor Snyder.

The different classes have been carried through the course prescribed in the catalogue.

In explanation of the following reports, I will say that we have no Junior Class this year.

Respectfully,
WM. H. PARKER,
Professor Civil Engineering and Astronomy.

Report of Professor of Agriculture.

Department of Agriculture,
MARYLAND AGR. COLLEGE,
June 6th, 1877.

President Parker:

SIR: I have the honor, in accordance with your directions, to offer the following report, showing what has been done in my department during the present session.

I have been teaching the various classes all the studies set forth in the catalogue of last year, as follows: The Progressive Farmer, How Crops Grow, How Crops Feed, Allen's Book of the Farm and Pendleton's Scientific Agriculture.

These books contain a full account of all the main subjects of both scientific and practical agriculture, such as drainage, practical tests for guanos, manufacture of super phosphates at home, economy in the making of manures, economy of labor, rotation of crops, etc.

The course pursued through the year has been as follows:

The preparatory class in Botany has occupied one hour a day, alternating with Agricultural Chemistry, and lectures accompanying and explaining the same; the Second Section Freshman Class has studied How Crops Feed, How Crops Grow, Gardening for Profit and practical application of the same, and Allen's Book of the Farm, *through* classification of soils, one hour per day, alternating with Scientific Agriculture and lectures explanatory of all subjects taught.

First Section Freshman has finished Allen's Book of the Farm, and commenced Stephen's Farmers' Guide and pursued it as far as the treatment of stock. Farm and Fireside, by Blake, has been used as a text book one hour per day, alternating with Preparatory Botany.

The Senior Class has finished Pendleton's Scientific Agriculture, Mahan's Engineering as applied to roads and bridges, embankments, and drainage. I have used Chemical and Field Lectures, by J. E. Leschemaker, and have also discussed the Humus Theory, in the section room. Actual exercise on the Farm, and in the Garden, has been resorted to as often as possible, especially in the care of stock at the time of parturition. Besides lectures in my section room, we have had a regular course of public lectures by non-residents, all prominent Agriculturalists of the State, such as Mr. Henry Hallowell, Col. Curtis, Col. W. W. W. Bowie, Commodore Ammen, and Prof. J. D. Warfield.

The crop of corn raised on 32 acres was 200 barrels. The crop of hay was 30 tons; oats, 300 bushels; pork, salted down, 2500 pounds. We raised an ample supply of summer vegetables, and some winter ones; but my crop of late Irish potatoes was a complete failure on account of the drought. I have seeded 21 acres in wheat, experimenting with three standard fertilizers procured from E. B. Whitman, Baltimore, namely: British Mixture, Phosphate of Lime and Bone Dust. The wheat was drilled in, seeded with timothy and clover, and rolled down in the spring. The result will be reported after harvest. The present prospect for a good crop is very promising. There are 15 acres seeded in oats and clover, fertilized with phosphate of lime, in fine condition. This year's corn crop of 26 acres is top-dressed with 1000 bushels of shell lime, and fertilized in the hill, one-third with Ammoniated Dissolved Bone, from John Merryman & Co.; one-third, Ammoniated Superphosphate, from Maryland Manufacturing Company, and the other third with Bone Compound, from Mr. Moore, Georgetown, D. C.

I have planted 12 barrels of Irish potatoes on land thoroughly prepared, top-dressed with stable manure, and fertilized in drill, with Whitman's Special Potato Fertilizer. The garden gives every promise of a liberal supply of vegetables. The fruit crop promises to be good. I planted on ½ acre of poor land, manured broadcast with stable manure, 3 quarts

of yellow corn received from the Agricultural Department, Washington, and the yield was 3½ barrels of such excellent grain that I selected 3 bushels for this year's planting. I have also experimented with the following seeds received from the Agricultural Department, all heavily manured and well put in, namely: a very excellent quality of oats, barley, mangold wurtzel, sugar beet and corn. The result will be reported.

We have a small herd of 13 cattle; a number of them should be disposed of and replaced by better, as, in my opinion, we should keep none but the best stock on this farm. We have a small flock of full blooded Cotswold sheep, (3 ewes and 1 buck,) that have yielded us 3 lambs. The yield of wool from these sheep was 11¾ pounds per head, last year, and 11 pounds the present season. I am sorry to say a very fine buck was killed by dogs last year. The hogs are of a good breed, (a cross of Chester and Berkshire,) and are doing well. There are 4 sows, 1 boar, 14 shoats, and 6 pigs, giving a good prospect of pork for the coming year.

We have 4 mules and 2 carriage horses, which will be entirely inadequate for the labor of this establishment when we commence, regularly, with the Experimental Department.

The Department of Agriculture is meagrely supplied with implements. Those absolutely necessary are a mower and reaper, a steamer for cooking feed, cattle and hay scales, and a complete outfit in harness. Ten acres have been surveyed and laid off for an experimental field. This has not been done before because of the crippled condition of the finances. In this field, I propose, especially, to exercise the students, performing most of the work by them, which, together with the course of study set down in the catalogue, I recommend for the next year's course in my department. This duty, with the care of the Garden, Fruit, Flowers, instruction in the section room, instruction in the care of stock, and a supervisory care of the remaining duties of the Farm, is all that the Professor of Agriculture can possibly attend to, to do himself and his students justice. Therefore, I especially request that the Farm

Manager, recommended by the President, and approved by the Board of Trustees at their last meeting, be a man of considerable intelligence, reliability and practical experience, as much responsibility must necessarily rest on him. We wish to approximate as far as our finances will admit, to the Superintendent of the Farm at the Massachusetts Agricultural College, that being a type of a successful College in this branch of education.

We have, as far as possible, encouraged work on the farm by students. They planted, replanted and thinned last year's crop of corn, and have planted the present crop. I recommend that work alternate with recitations, and that all labor, not compulsory, be remunerated at a fixed price per hour, as offering encouragement to labor.

We have had one student this session who paid a part of his fees in labor. I highly approve of the reception of such students, as they take great interest in agriculture, and it opens the field for a man to acquire an education by his own exertions.

Considering the means in my hands, I have accomplished more than I first expected. If the intelligent farmers of Maryland will visit the College, and examine for themselves, suggesting any improvements their experience may indicate, they will confer a great benefit upon the agricultural interests of the State, which this College is destined to represent. We heartily thank the honorable members of the Grange and others who have so visited us.

I am, sir, very respectfully, your obedient servant,

THOMAS M. JONES,
Professor of Agriculture.

Report of Prof. of Physics and Applied Mathematics.

MARYLAND AGR. COLLEGE,
Department of Physics and Applied Mathematics.
June 6th, 1877.

President Parker:

SIR: During the scholastic year beginning 20th September, 1876, and ending the 26th June, 1877, I have had under my instruction the Senior and Sophomore Classes in Physics; the Senior and Sophomore Classes in pure Mathematics; the Senior Class in Civil Engineering, and a part of the Freshman Class in Physics.

The Senior and Sophomore Classes, after finishing the study of a descriptive book in Natural Philosophy, embracing the principles of Hydrostatics, Hydrodynamics, Acoustics, Optics, and Electricity, took up the study of Applied Mathematics. In this study they have made use of such text-books as have received the sanction of the best mathematicians and teachers, and I am glad to say the subject has met with marked appreciation from these classes. They have kept at their work with considerable earnestness and diligence; and the close of the present session, I hope, finds them in the enjoyment of the satisfaction of duty done, and of being a little further on in the rugged road of science. The somewhat abnormal condition of these classes, and a lack of apparatus for illustrating, have made against them to some extent. These difficulties have been overcome as best we could. Drawings on the black-board have gone far towards making up for insufficiency of apparatus. The study of Forces, Moments, Centre of Parallel Forces, Centre of Gravity, and the discussions of Machines, Laws of Motion, &c., as presented by Todhunter, have been as full of interest as instruction. The student has been required not only to discuss principles in the abstract, but he has been exhorted to originality by having to solve

problems to which these principles are applied, and at each recitation his ingenuity and mathematical artifice have been tried. The drawings on the board have been executed with care, neatness and accuracy, thus developing mechanical skill, and seeming to have the effect of making him warm with his subject.

The chair of Pure Mathematics being vacant, a part of the duties of that department have been assigned to me. The Senior Class completed the study of the Differential and Integral Calculus, and the Sophomore has finished a course of Trigonometry, Analytical and Descriptive Geometry. The Senior Class has also gone through a course of Civil Engineering with my assistance. The study of materials, masonry, bridges, and roads, &c., it is conceded, is of great assistance in the training of the educated, scientific, and practical agriculturist, and must, therefore, form a part of the leading feature of this institution.

The Sophomore Class has been exercised in practical surveying, and as a result of the work done, I have to submit maps, made by the cadets, of the College-farm, divided into lots according to instructions.

The Freshman Class, first section, has finished the study of an elementary work in Physics, which, in the main, is descriptive: and here the lack of apparatus was chiefly felt. The members of this class will study to more advantage, I hope, next session, with the aid of new text-books and the advantage of witnessing experiments. The second section of this class dropped this study after the close of the first term, on account of multiplicity of studies and the extreme youth of its members.

As the College emerges from the mists which have hitherto somewhat clouded it, and as it has now entirely overcome the financial difficulties which clogged its way, it is hoped this department will be furnished with all the appliances necessary for its proper work. Theory and experiment must go hand in hand here in order to get satisfactory results. It is proposed to fit up a room for the exclusive use of the Profes-

sor of Physics, where experiments will be performed and lectures delivered. I append a list of some useful additions to our apparatus, which are wanting, viz:

Atwood's Machine	$32 00
Nicholson's Hydrometer	4 00
Madgeburgh Hemispheres of brass, 3¼ inches in diameter.	7 00
Fountain in vacuo, 24 inches high	6 50
Parabolic Reflectors, 13 inches in diameter	25 00
Small Horizontal Engine	11 00
Friction Electrical Machine, 12 inches in diameter	16 00
Metallic plates for dancing images	2 75
One pair pith dancing images	1 75
Electrical Chimes, 2 bells	1 75
Six yards copper wire	90
School Telegraph	5 50
Gyroscope, top wheel 2¼ inches in diameter	2 25
Mechanical powers, or illustrations of pulleys	18 00
Inertia Apparatus with 5 balls	5 00
Set of Demonstration lenses	3 00
Mounted Concave and Convex Mirrors	8 00
Magic Lantern and Pictures	150 00

I invite speedy attention to these wants of the experimental part of this department, in the hope that they will soon be supplied, and that, in the future, its standard may be raised.

Very respectfully,

R. E. NELSON,

Professor Physics and Applied Mathematics.

Report Prof. English Literature, Mental Philosophy and History, &c.

Department of English Literature,
MARYLAND AGR. COLLEGE,
June 6th, 1877.

President Parker:

SIR: The work of the year, whilst not as thorough as I desire, is, at least, encouraging. I have endeavored to present to the Senior Class an intelligent digest of English Literature from Chaucer to Thackeray. Selections from all the prominent authors have been noted and frequently read.

In Psychology, I have dwelt upon sensation and perception, the senses, habits of sensation and perception, conceptions, abstraction, attention, dreaming, internal origin of knowledge, suggestion, consciousness, association, memory, reasoning, sensibilities, including emotions of beauty, sublimity, desires, instincts and appetites.

The subject of Logic was taken up at the beginning of the second session. Discussions upon intuitions, laws of thoughts, concepts, judgments, arguments, inductions, doctrine of method, modified logic, syllogisms and fallacies have occupied a portion of each week.

Two regular courses of Rhetoric, embracing the laws of composition and declamation, were organized at the beginning of the second term of the Freshman Class. Special attention has been directed to the laws of punctuation. Original essays and declamations have been regularly required for criticism. In addition, considerable encouragement has been offered students of all classes in select readings and Shakespearian dialogues, not only in the class room, but also before the faculty and students in the Chapel.

In the department of Grammar I have thoroughly, persistently and continuously, by daily drills, diagrams, digests and

synopses of the laws of synthesis and analysis, literally mapped the whole subject upon the blackboards, with encouraging success.

Relying upon the eye as the chief aid to memory, I have required historical charts, genealogical lines, embracing every portion of historical reading, as the surest tabular reviews in the department of History.

Story's Comments upon the Constitution has been used as reference in discussing the laws and history of the United States.

MERCER SOCIETY.

It gives me pleasure to mark the interest manifested in the Mercer Literary Association since its reorganization under my direction at the beginning of the past year. The membership numbers twenty-four.

The Professors, generally, are privileged members, manifesting considerable interest in the discussions of the society.

The following officers are now inaugurated: President, George Thomas; Vice-President, E. G. Emack; Treasurer, R. R. Beall; Secretary, Albert L. Key; Librarian, H. G. Squiers; Editor of "The Review," Scott Truxtun.

The following questions have been discussed during the year: Was the execution of Major Andre justifiable? Is the policy of the Government toward the Indian the true policy? Do inventions improve the laboring classes? Would it be expedient for the United States to have a large standing army? Should a system of compulsory education be established?

The programme for the annual celebration of the society embraces a public discussion of the subject: Ought capital punishment, as a matter of right, be abolished?

The Society has elected the following disputants upon the subject: Affirmative, M. B. Lyon, T. T. Houston, R. R. Beall; negative, J. F. Mercer, E. L. Curtis and Scott Truxtun.

Mr. McCullough, of Annapolis, delivers the annual address before the society.

LIBRARY.

The library of the Association consists of 1348 volumes.

The late Dr. Mercer, of New Orleans, donated the sum of one thousand dollars to the College. Most of the works of the library have been purchased by means of dues, fees and other incomes.

The biographical and historical works, including Bancroft's, Macauley's, Hume's, Irving's and many others, number 400 volumes.

There are 100 agricultural and other scientific works, including a very elegant series of the American Encyclopedia.

Of fiction there are 350 volumes; of poetry, 200 volumes, including a full list of British poets and essayists, and 200 volumes of miscellaneous works. It is a part of the policy of the association to make yearly additions to the nucleus already formed.

For furthering this end, I suggest that regular literary entertainments be held, at stated intervals, during the next year.

As it shall be my aim not only to maintain the present standard of our curriculum in the department of English, but even to raise it still higher, I shall, in the coming year, deliver a series of written lectures upon all interesting periods in the history of our language. Taking hold of the prominent features standing out along the line of ages, I shall endeavor to make them memorable links in the chain which binds them to us.

Fully sympathizing with you in the laborious work of developing an institution so beneficial to the best interests of our State, it shall be my pleasure to so aid you in moulding it as to meet the requirements and wishes of the people.

With much hope for the coming year, I am, yours,

Most respectfully,

J. D. WARFIELD,

Prof. Eng. Literature, Ment. Philos. and History, &c., &c.

Report of Prof. of Chemistry and Natural History.

Department of Chemistry,
MARYLAND AGR. COLLEGE,
June 6th, 1877.

President Parker:

SIR: It affords me pleasure to inform you of the work that has been accomplished in the Chemical department.

The Senior Class, having devoted a considerable portion of the year to qualitative analysis, has made an interesting analysis of the water used at the College; a quantitative analysis of gunpowder, and analyses of the fertilizers used in the production of crops.

My custom has been to place the work of investigation into the hands of the students, allowing them to exhaust all available tests. The results are both individual and practical.

The investigations of Mineralogy have been very much aided by a collection of specimens, recently enlarged by contributions from the Centennial Exhibition. It is hoped that many other valuable collections will be offered from the different portions of our State.

The subject of Geology has been fully dwelt upon. Dana's text-books upon Geology and Mineralogy being used as reference. The Archæan, Silurian, Devonian, Carboniferous, Reptilian, Mammalian and Quarternary ages have been thoroughly discussed, as well as Historical and Dynamical Geology.

The Anatomical department is well equipped with excellent skeletons and charts. The classes in Physiology have completed the work of the course.

In Organic and Inorganic Chemistry, the Freshman Class has made satisfactory progress. They are prepared to begin the exposition of the various influences of physical agencies,

as heat, light, magnetism and electricity on chemical phenomena.

I propose to develop the subject more extensively by a series of lectures upon chemical physics, organic and inorganic chemistry, accompanied by experiments. But few experiments have been performed before the classes during the year, owing to a lack of apparatus. Experiments greatly diminish the labors of an instructor, and render the class exercises far more interesting.

The analysis of soils, of fertilizers, and all the attendant aids to a complete education in my department, will receive special attention. Our laboratory can be of incalculable benefit to the farmers of Maryland, if it be furnished with the necessary apparatus for thorough practical work. It is intended that, in the future, the farmer shall derive some advantage from our investigations.

The library of reference for students in chemistry is not very extensive. I am anxious to increase it at but a small outlay.

In the department of Analytical Chemistry, it is the custom to charge extra for chemicals, glass and apparatus. Fifteen dollars will not more than cover the expense, per year, of each student.

Chemistry, as applied to the arts and manufactures, must be the specialty in my department; therefore, a full outfit is necessary. Taught in this manner, chemistry trains all the senses; and the processes of reason necessary to attain successful results, are of the same character as are required in the daily operations of life. The manufacturers of the State can assist this department very materially by donating articles for analysis, &c.

The student is also encouraged to make exhaustive studies of as many substances as his time will permit, in addition to his qualitative analysis. Those intending to become teachers will, in this way, go through all of the important elements; those intending to become physicians, the substances which are important in therapeutics; those intending to become

farmers, manufacturers, engineers, &c., will, in like manner, have an opportunity of becoming familiarized with the materials to be dealt with in after life.

In order to accomplish the work planned for next year, some expense will have to be incurred. The following are among the most important things needed, with probable cost:

Balances for Quantitative Anal	$100 00
Furnace for Organic Analysis	40 00
Spectroscope and Microscope	200 00
Photographic Apparatus	25 00
Telegraphic "	25 00
Desks for Laboratory, general chemical apparatus and chemicals	500 00
	$890 00

In conclusion, I am happy to report that the work of the majority of the pupils in the classes in my department has been cheerful, intelligent, thorough, and, perhaps, as extensive as ought to be expected when the time at their disposal is taken into consideration. I am confident that they deserve all praise for their uniform courtesy and attention.

Respectfully submitted,

WM. D. MORGAN,

Prof. Chemistry and Natural History.

Report Professor Ancient and Modern Languages.

Department of Languages,
MARYLAND AGR. COLLEGE,
June 6th, 1877.

President W. H. Parker:

SIR: According to your request, I have the honor to transmit the following report upon the work entrusted to me during the session 1876–1877.

Forty-nine students have been enrolled in my department. Eighteen have studied French; seventeen, German, and fourteen, Latin. There has been no desire for Greek.

Owing to the different degrees of advancement, I have had much difficulty in grading the classes so as to advance them regularly.

It has been my desire to establish a regular course, and to remove the difficulties resulting from the fact that the study of languages has been, this year, necessarily left optional. Altogether, the standing of the classes has not reached the degree of perfection I have tried to attain. Several students of the first section, Freshman Class, made up their minds, at the beginning of the second term, to take up the study of Latin; therefore, I was compelled to teach those the very first elements of the Latin language, which ought to have been taught in the Preparatory Department. I suggest, therefore, that in the future the elements of Latin, being the elements and basis of modern languages, shall be required in the Preparatory Department.

The SENIOR CLASS in *Latin* have read: Cicero: oratio in Catilinam. P. Virgilius Maro: Æneid, liber II and IV. —Sallust: bellum jugurthinum.—Andrew's and Stoddard's Latin Grammar, translations from English into Latin, including original compositions.—In *French:* Fasquelle's French

course, Grammar and translations, original compositions and colloquial exercises.—"The Classic French Reader," by De Fivas—"Nettément histoire de la conquête d'Alger."—Le bourgeois gentilhomme" Comédie de Molière—"La Henriade" par Voltaire.

The First Section, Freshman Class, in *Latin* have read: Cicero: oratio pro lege Manilia. Sallust; bellum Catilinarium.—Grammar: Dr. Smith's principia latina, part II; translations from English into Latin.—In *French:* Fasquelle's French course; De Fivas' Classical French Reader; Comte Ségur's histoire de la campagne 1812; Erkmann-Chatrain's le conscrit. In *German:* Otto's German Grammar; Adler's Progressive German Reader; Schiller's play: Maria Stuart; The German Echo; dialogues to teach German conversation, by Worman.

The Second Section, Freshman Class, in *Latin* have read: Cæsar: de bello Gallico, liber II et IV; Latin Reader; Dr. Smith's principia latina, part I; translations from English into Latin.—In *French:* Fasquelle's French course: De Fivas' Elementary French Reader. In *German:* S. Ahn's German Grammar.

The Preparatory Department used in *French*, Fasquelle's small edition, and in *German*, Ahn's Grammar.

I have the honor to be, very respectfully,

Your obedient servant,

F. VON BROCKDORFF,

Professor Ancient and Modern Languages.

Report of Commandant of Cadets.

Military Department,
MARYLAND AGR. COLLEGE,
June 6th, 1877.

President W. H. Parker:

SIR: I have the honor to submit the following report: At the present academic year, I was ordered to take charge of the military department as Commandant of Cadets. Since that time military studies and duties have been steadily carried out. The corps has been drilled in the school of the soldier, company, battalion, instruction for skirmishers and the bayonet exercise. The latter drill, having taken place during the severe weather of the winter, the attic of the barrack was used as a drill-room. The Cadets have also been instructed in the military ceremonies of parade, inspection and review.

At the beginning of the year, the uniform was changed. The one adopted and now used, is similar to that worn by the Cadets at West Point and the Va. Mil. Institute. Its neat, military appearance has added much to the interest in the military department, and has assisted in creating that *esprit de corps* so marked in well organized military bodies.

For the better preservation of good order, and for the purpose of instructing the Cadets in the duties and responsibilities of sentinel, a guard has been detailed, each day, according to the prescribed regulations. All cadets have been required to perform this duty.

It being deemed proper that Cadets should police their own quarters, an orderly from each room has been detailed for this purpose; each occupant performing the duty in turn. This duty has always been faithfully discharged. The neat and orderly condition of the cadet-quarters was complimented by the Board at its meeting in December.

The barracks are inspected on Sundays by the President and Faculty, and daily, by the Commandant of Cadets.

There has also been an inspection of the battalion, under arms, each Sunday morning, according to the form prescribed in the regulations for the army of the United States.

The arms used by the Cadets are the Enfield musket. They are in good condition, though I would recommend that they be exchanged for the new cadet musket.

A drum-corps has been organized and placed under instruction.

The corps has been drilled twice before the Board of Trustees, and has been visited by distinguished officers of the Army and Navy. At all times, both on and off duty, the Cadets have conducted themselves so as to be worthy of great commendation. There has been an earnest enthusiasm evinced for military duty throughout the entire year. This has lightened the work of the instructor to a great extent.

Honor is due the officers and non-commissioned officers for the faithful and soldier like manner in which they have discharged their duty.

I would, in conclusion, respectfully recommend that a systematic course of theoretical instruction be marked out. Its good effect cannot be doubted; and, if properly arranged, the time occupied would not interfere with the other branches.

I am, sir, your obedient servant,

T. F. SNYDER,
Comdt. of Cadets.

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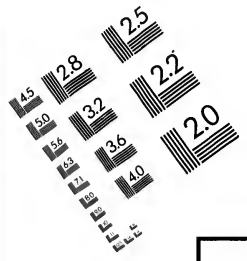
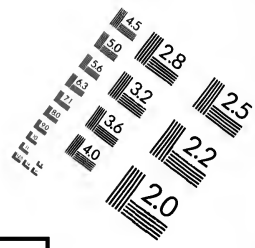
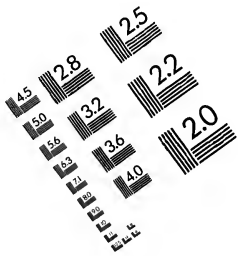
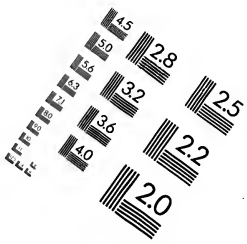
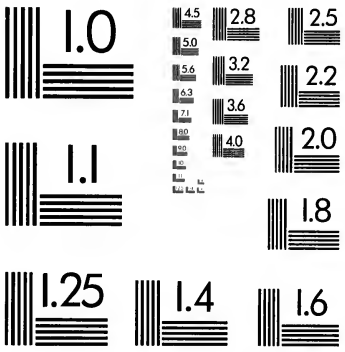
METRIC GENERAL PURPOSE TARGET
PHOTOGRAPHIC

150 mm

100 mm



1.0 mm

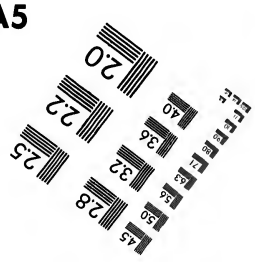
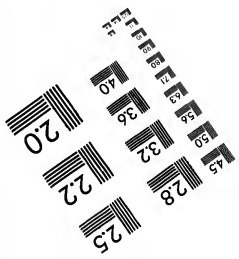
1.5 mm

2.0 mm

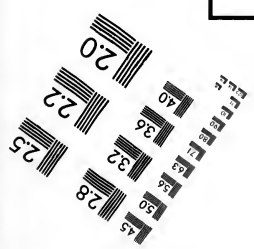
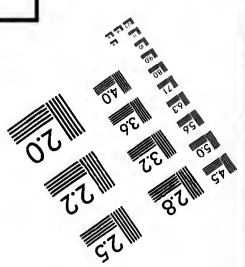
2.5 mm

A5

A4

PRECISION℠ RESOLUTION TARGETS

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577 LOCUST ST.

END OF REEL

PLEASE REWIND